

B3 973  
44

PE 1.3 no.9 1920

LIBRARY  
FION

1  
en. S. 3  
no-6257  
1920

Bureau of

# Medical Education and Licensure

STATE OF PENNSYLVANIA

HOSPITAL INTERN YEAR

Bulletin No. 9

JANUARY, 1920

PENNSYLVANIA STATE LIBRARY

DOCUMENTS SECTION

P-38.19  
3.3



Bureau of

**Medical Education and**

**Licensure**

STATE OF PENNSYLVANIA

---

**HOSPITAL INTERN YEAR**

---

**Bulletin No. 9**

---

**JANUARY, 1920**

**(To be issued periodically)**

# Bureau of Medical Education and Licensure

---

## MEMBER EX OFFICIO

THOMAS E. FINEGAN

*Department of Public Instruction, Harrisburg, Pa.*

EDWARD MARTIN, M. D.

*Commissioner of Health*

---

## MEMBERS BY APPOINTMENT

JOHN M. BALDY, M. D.

*409 Lincoln Bldg., Philadelphia, Pa.*

IRVIN D. METZGER, M. D.

*810 Westinghouse Bldg., Pittsburgh, Pa.*

CALVIN L. JOHNSTONBAUGH, M. D.

*Bethlehem, Pa.*

ADOLPH KOENIG, M. D.

*1111 Westinghouse Bldg., Pittsburgh, Pa.*

WILLIAM M. HILLEGAS, M. D.

*1807 Chestnut Street, Philadelphia, Pa.*

---

## OFFICERS AND EMPLOYEES

JOHN M. BALDY, *President*

THOMAS E. FINEGAN, *Secretary and Treasurer*

MARY Y. McREYNOLDS, *Director*

IDA C. SWEENEY, *Clerk*

## FIFTH-YEAR OF INSTRUCTION IN MEDICINE IN THE COMMONWEALTH OF PENNSYLVANIA

---

### HOSPITAL INTERN YEAR

The following extract from the Act of June, 1911, entitled

#### "AN ACT

Relating to the right to practice medicine and surgery in the Commonwealth of Pennsylvania;" etc., indicates the course of instruction which a candidate for licensure in Pennsylvania must have procured.

"Section 5. Applicants for licensure under the provisions of this act shall furnish, prior to any examination by the said bureau, satisfactory proof that he or she is twenty-one years of age, is of good moral character, is not addicted to the intemperate use of alcohol or narcotic drugs, and has had a general education of not less than a standard four years' high school course, or its equivalent, and not less than one year of college credits in chemistry, biology, and physics,—all of which have been received before admission to medical study,—and have attended four graded courses of not less than thirty-two weeks of not less than thirty-five hours each, of actual work in didactic, laboratory and clinical study, in different calendar

years, in some reputable and legally incorporated medical school or college, or colleges recognized as such by the Bureau of Medical Education and Licensure of the State of Pennsylvania, the dean or proper officer of which college having certified that the applicant has successfully passed each of said respective courses, and shall have completed a year as intern in a hospital which shall have at least twenty-five beds to each intern, devoted to the treatment of medical, surgical, gynecological and special diseases; shall maintain or establish co-operation with a maternity department or hospital, in which each intern shall have not less than six weeks' service, or the equivalent thereof, during which time he shall have attended or participated in the attendance upon not less than six confinements; shall maintain a thoroughly equipped, modern pathological and clinical laboratory, proportionate to the necessities of the hospital; and the records on file of the cases treated in said hospitals shall give evidence of the laboratory work so done by the intern; shall maintain a department of anesthesia consisting of one or more anesthetists, who shall have supervision over all the anesthesia given in the institution and whose duty it will be to instruct all interns in the administration of anesthetics."

It will be observed that the specific requirements of the above section of the act relate to the following:

1. Amount of work. A hospital shall have at least twenty-five beds to each intern.

2. Diversity of work. A hospital shall treat medical, surgical, gynecological and special diseases.

3. Maternity department, or co-operation with one.

4. Clinical laboratory; proportionate to the necessities of the hospital.

5. Records; well kept, showing evidence of the work being done by the intern in all departments.

6. Department of anesthesia; with competent supervision over all anesthesia given in the hospital.

From the foregoing it will be seen that the hospitals of the Commonwealth of Pennsylvania have become a part of the teaching system of medicine and surgery in the State of Pennsylvania, and the Bureau of Medical Education and Licensure has found it necessary to set forth in compact form what is expected of each individual hospital purporting to give such practical training in keeping with the Act of Assembly.

The purpose of this bulletin is to set forth in more or less detail the specific requirements to be made of hospitals which will entitle them to the privilege of giving such training as will meet the approval of the Bureau in its interpretation of the law.

The Bureau has made the following classifications of hospitals in order to do away with the disadvantage and complaints of a comparative classification; it also gives the prospective intern some idea as to the type of hospital he is choosing together with an intimation of the work which will give him the most desired results. In each classification no effort is made to indicate the relative merits of the hospitals so classified.

### FULL CREDIT HOSPITALS

Full credit (at least 12 months) for internship will be given for a complete service in these hospitals.

This list includes hospitals which are organized and administered so as to conform as nearly as possible to the provisions of the Act of Assembly of June 3, 1911, P. L. P. P. 639-649, and as subsequently amended. They have a well balanced medical, medical specialties, surgical, surgical specialties, obstetrical, gynecological and laboratory service, with



a fixed general staff, each department being represented by one or more physicians who specialize in the class of cases treated in that department.

Under this classification are listed only such hospitals as now show satisfactory evidence of complying reasonably well with the following requirements, having:

- (a) A staff whose members are giving efficient clinical and laboratory instruction to the interns.
- (b) A system of record keeping in all departments efficiently conducted.
- (c) An X-ray department adequately equipped, officered and managed.
- (d) Pathological and clinical laboratories which are adequately equipped, officered and managed.
- (e) An anesthetic department properly established and maintained.
- (f) An obstetrical department, with ample facilities for instruction under supervision.
- (g) All other departments that are essential to a complete medical training.

# Mercy Hospital, Philadelphia

Allegheny General Hospital, Pittsburgh.  
Allentown Hospital, Allentown.  
Bryn Mawr Hospital, Philadelphia.  
Chester Hospital, Chester.  
Columbia Hospital, Wilkinsburg.  
Easton Hospital, Easton.  
Frankford Hospital, Philadelphia.  
Frederick Douglass Hospital, Philadelphia.  
Germantown Hospital, Philadelphia.  
Geisinger Hospital, Danville.  
Homeopathic Hospital of Pittsburgh.  
Homeopathic Hospital, Scranton.  
Hahnemann Hospital, Philadelphia.  
Harrisburg Hospital, Harrisburg.  
Jewish Hospital, Philadelphia.  
Jefferson Hospital, Philadelphia.  
Lancaster General Hospital, Lancaster.  
Lankenau Hospital, Philadelphia.  
Methodist Episcopal Hospital, Philadelphia.  
Mercy Hospital, Pittsburgh.  
McKeesport Hospital, McKeesport.  
Mercy Hospital, Wilkes-Barre.  
Misericordia Hospital, Philadelphia.  
Montefiore Hospital, Pittsburgh.  
Mt. Sinai Hospital, Philadelphia.  
Polyclinic Hospital, Philadelphia.  
Pennsylvania Hospital, Philadelphia.  
Protestant Episcopal Hospital, Philadelphia.  
Presbyterian Hospital, Philadelphia.  
Philadelphia General Hospital, Philadelphia.  
Passavant Hospital, Pittsburgh.  
Presbyterian Hospital, Pittsburgh.  
Robert Packer Hospital, Sayre.  
State Hospital, Scranton.  
South Side Hospital, Pittsburgh.  
St. Agnes Hospital, Philadelphia.  
St. Francis Hospital, Pittsburgh.  
St. John's Hospital, Pittsburgh.  
St. Joseph's Hospital, Philadelphia.  
St. Joseph's Hospital, Pittsburgh.  
St. Luke's Hospital, Bethlehem.  
St. Margaret's Hospital, Pittsburgh.  
St. Mary's Hospital, Philadelphia.  
St. Timothy's Memorial Hospital, Philadelphia.  
St. Vincent's Hospital, Erie.  
Samaritan Hospital, Philadelphia.  
University Hospital, Philadelphia.

- Western Pennsylvania Hospital, Pittsburgh.
- Wilkes-Barre City Hospital, Wilkes-Barre.
- Windber Hospital, Windber.
- Woman's Hospital, Philadelphia.
- Woman's Medical College Hospital, Philadelphia.
- Women's Homeopathic Hospital, Philadelphia.

## SIX MONTHS CREDIT HOSPITALS.

Six (6) months credit will be given for a six months or more completed service in these hospitals.

This list includes hospitals which have a fixed general staff representing all or most of the departments of medicine, but in which the work performed is largely either surgical or medical. In these hospitals the work of the laboratories conforms largely to the type of cases predominating. Or, includes hospitals which are under the direction of some leading surgeon, who, with a limited number of assistants, assumes full control of the activities of the various departments. In these hospitals the work of the laboratories is largely surgical.

- Blossburg State Hospital, Blossburg.
- Conemaugh Valley Memorial Hospital.
- Hamot Hospital, Erie.
- Homeopathic Hospital, Reading.
- Moses Taylor Hospital, Scranton.
- Pittsburgh Hospital, Pittsburgh.
- Pottsville Hospital, Pottsville.
- State Hospital, Hazleton.
- State Hospital, Ashland.
- Uniontown Hospital, Uniontown.

### THREE MONTHS CREDIT HOSPITALS .

Three (3) months credit will be given for a three months or more completed service in these hospitals.

This list includes hospitals admitting to their service but a single or special class of cases. The work of the laboratories of these hospitals refers largely if not entirely to the particular specialty represented by the hospitals' patients.

Under this heading are grouped such hospitals as are capable of giving a competent and valuable training in certain special lines which they cover. In view of their limited field such hospitals cannot give such a well-rounded training as is contemplated by law.

The service of these hospitals is available and valuable to those who have already completed their general internship, as well as to those who have received appointments in general hospitals and who are awaiting their turn to enter upon such general service. The Bureau would advise such use of these special hospitals and herewith approves them for this purpose.

American Oncologic Hospital, Philadelphia.  
 Children's Homeopathic Hospital, Philadelphia.  
 Children's Hospital, Pittsburgh.  
 Children's Hospital, Philadelphia.  
 Eye and Ear Hospital, Pittsburgh.  
 Jewish Maternity Hospital, Philadelphia.  
 Magee Maternity Hospital, Pittsburgh.  
 Municipal Hospital, Philadelphia.

Orthopaedic Hospital, Philadelphia.  
 Pennsylvania Hospital for the Insane, Philadelphia.  
 Philadelphia Lying-In-Charity Hospital, Philadelphia.  
 Roselia Foundling and Maternity Hospital, Pittsburgh.  
 Rush Hospital, Philadelphia.  
 St. Christopher's Hospital, Philadelphia.  
 St. Vincent's Maternity Hospital, Philadelphia.  
 State Hospital for the Insane, Warren.  
 State Hospital for the Insane, Norristown.  
 State Hospital for the Insane, Rittersville.  
 Tuberculosis League Hospital, Pittsburgh.  
 West Philadelphia Hospital for Women, Philadelphia.  
 Wills Eye Hospital, Philadelphia.  
 Woman's Southern Homeopathic Hospital, Philadelphia.

The Bureau desires to assure all prospective interns that hospitals in the Limited Credit Classes are thoroughly competent to provide instruction according to their limited organization and class of work done in such hospitals. It is recommended that a service in any approved hospital of this state be selected in preference to a service in a hospital in another state not accepted and approved by this Bureau.

Certain other hospitals, not now listed as qualified to give the intern year may have an adequate physical equipment, but convincing evidence has been obtained by inspections that present methods in these hospitals are such as to preclude an intern from now obtaining the character of instruction contemplated by law.

Hospitals without an organized staff, which admit to practice all the physicians of the locality are not and can never be suitable for intern education. This class of hospital has many merits and often serves a real need in the community and their exclusion from these lists carries with it no criticism or hint of demerit.

Now that the foreign war is over and a full complement of staff doctors is back in active practice and a full quota of interns is available, the Bureau feels that no further excuses will be taken for non-fulfillment of promises, and for lack of complete organization and equipment necessary to meet the standard set by the Bureau. Furthermore the Bureau will in the future closely inspect the exact methods of instruction given the interns by the staff doctors, the amount and character of such instruction, and will hold the hospital strictly responsible for the fidelity of staff doctors in doing their full duty as pertains to this matter.

After frequent inspections of all the hospitals of the Commonwealth and after a careful observation and study of their present equipment with a due consideration of their possibilities, the Bureau hereby tentatively outlines its *future* standardization of approved hospitals on the basis indicated by the following data:

## RECORDS

### (Minimum Requirement)

*Record Room:* In this should be kept admission card, history sheet, temperature chart, order sheet, nurses' record sheet, operating room sheet, obstetrical and prenatal sheets, x-ray finding sheet, laboratory-finding sheet, diagnosis card and end result (follow-up) card.

*X-ray Laboratory:* (a) record cards; (b) plates.

*Pathological and Clinical Laboratory:* (a) record cards; (b) slides; (c) paraffin blocks or celloidin blocks.

These should all be properly filed in their respective departments, cross-indexed, and preserved permanently in easily accessible places.

All records, plates and specimens must be kept absolutely within the hospital for future reference.

## X-RAY LABORATORIES

These should be equipped for skiagraphy, fluoroscopy, development of plates and for treatments. All of this should be done within the hospital.

The service of the intern should be a compulsory one in this department and the Roentgenologist in charge should understand that one of his duties is to instruct the intern in all the work of the department.

The department should be open the entire day, and, where a full-time Roentgenologist is not on duty, there should be some one available in the hospital who is capable of doing emergency work.

Where the Roentgenologist is not on full time, definite hours daily at the hospital should be observed by him so as to encourage requests for routine examinations and treatments.

Suitable provision within the laboratory should be made for recording and filing all work done. The use of a card system is especially advised, cross-indexed with the case records.

## **PATHOLOGICAL AND CLINICAL LABORATORIES**

This department should be so equipped as to offer facilities for performing all the tests called for by the needs of a modern hospital, including:

- (a) Clinical microscopy.
- (b) Pathological histology.
- (c) Bacteriology.
- (d) Physiological Chemistry.
- (e) Serology.

The minimum equipment permissible would include:

- 1 Autoclave vertical type, 11x24 inches, inside dimensions, with hinged lid.
- 1 Arnold sterilizer, Board of Health type, 16x24 12" inside dimensions, on stand.



- 1 Hot Air Sterilizer, Lautenschlager type, 18x24x14" inside dimensions.
- 1 Incubator, Hospital type, 18x18x12 inches inside dimensions.
- 1 Inspissator, 16x14x2½ inches.
- 1 Paraffin bath, 12x12x23 inches.
- 6 Asbestos mats.
- 2 Water baths, copper round 8" diameter, on tripod.
- 6 Wire racks for Petrie dishes.
- 8 Wire baskets, 6x6x6 inches.
- 1 Microscope, Spencer No. 36H or 20H, or Bauch & Lomb BBH with swing-out condenser, complete.
- 1 Mechanical stage, Spencer No. 485.
- 1 Dark-Field condenser.
- 1 Funnel stop, for use with dark-field condenser.
- 1 Mazda concentrated filament incandescent lamp on stand for dark field work.
- 1 Post-mortem set of 16 instruments, in case.
- 1 Freezing microtome, Bausch & Lomb No. 3056.
- 1 Minot, rotary microtome, for paraffin work.
- 1 Knife for each of the above microtomes.
- 1 Block stop, 4x16 inches for microtome knives.
- 1 Water hone, for microtome knives.
- 1 Yellow Belgian hone, large size.
- 2 Thoma blood counting apparatus, complete for red and white corpuscles.
- 3 Pipettes for red and white corpuscles.
- 6 Cover-glasses for blood counters.
- 2 Saxon-Drummond holders for blood pipettes.
- 1 Dare haemoglobinometer.
- 1 Stewart colony counter.
- 1 Harvard laboratory scale.
- 1 Set weights, 1 ctg. to 500 gms.
- 1 International electric centrifuge, size 1, type A, for 100 V. D. C. with head for 8, 15 cc tubes.
- 4 Bunsen burners, regular type.
- 2 Bunsen burners with pilot.
- 2 Radial burners.
- 1 Blast burner.
- 1 Foot-pressure blower, 9 inch.
- 1 Iron support with four rings.
- 2 Iron tables for ring stand, to carry Bunsen burner.

- 2 Burnette stands, iron double.
- 2 Iron tripods, 6 inch diameter.
- 4 Pcs. wire gauze, Nicklechromium 6x6 inches.
- 6 Wire test tube clamps.
- 12 Stewart cover-glass forceps.
- 1 Iron support, complete for condenser.
- 1 Slide forcep, De-Brand.
- 2 Funnel supports, wooden for two funnels.
- 6 Wooden test tube racks, 36 size.
- 1 Set cork borer, brass, No. 1-6.
- 1 bottle forcep, 10 inch.
- 1 Each spatulas, flexible metal, 3 and 6 inch.
- 1 Filter pump, large size with coupling.
- 200 Filter paper, 4 inch diameter, white.
- 200 Filter paper, 6 inch diameter, white.
- 125 Filter paper, 19x19 inches, white.
- 2 Section lifters,  $\frac{3}{4}$  inch, flexible.
- 4 Iron boxes, for sterilizing pipettes.
- 3 Wedgewood mortar and pestle, 6 inches.
- 2 Porcelain plates, for stomach contents.
- 1 Jar brush.
- 12 Large test tube brushes.
- 2 Gr. corks, assorted.
- 500 Labels for slides.
- 100 Labels for bottles.
- 2 Lbs. pure gum stoppers, assorted sizes.
- 10 Ft. white hand-made tubing for Bunsen burners.
- 10 Ft. rubber tubing for general purposes.
- 5 Ft. rubber tubing for blood pipettes.
- 2 Universal stands for fermentation tubes, etc.
- 1 Each record on Luer syringes, 5 ; 10 ; and 20 cc.
- 3 Eschbach albuminometers.
- 1 Doremus-Hinds urinometer.
- 1 Einhorn saccharometer.
- 6 Squibbs urinometers.
- 1 Each chemical thermometers, 150° C and 360° C.
- 2 Kolle needle holders for platinum wire.
- 6 Nests beakers, Griffin regular form with lip to 1000 cc.
- 1 Bell jar for microscope.
- 2 Balsam bottles.
- 24 Tk. dropping bottles, 50 cc.
- 25 Reagent bottles, glass-stoppered, 250 cc.
- 4 Burettes, 50 cc in 1-10 with glass stop cock.

- 3 Dozen Petri dishes, 100x10 mm.
- 3 Each graduated cylinders, 25; 100; 250; 500 and 1000 cc.
- 1 Each porcelain evaporating dishes, 500 and 100 cc.
- 24 Fermentation tubes without foot.
- 1 Bunsen filter flask, 500 cc.
- 8 Erlenmeyer flasks, 1000 cc.
- 10 Erlenmeyer flasks, 250 cc.
- 10 Erlenmeyer flasks, 120 cc.
- 1 Distilling flask, 1000 cc.
- 1 Volumetric flask, stoppered, 500 cc.
- 4 Each glass funnels, 75; 100; 150; and 200 mm. diameter.
- 2 Lbs. glass tubing assorted.
- $\frac{1}{2}$  Lb. glass rods, assorted.
- 1 Doz. medicine droppers.
- $\frac{1}{2}$  Gr. specimen bottles with corks, 4 oz.
- 24 Pipettes, 1 cc in 1/100.
- 12 Pipettes, 5 cc in 1/20.
- 6 Pipettes, 10 cc in 1/10.
- Pipettes, 25 cc (volume).
- Pipettes, 50 cc (volume).
- Pipettes, 100 cc (volume).
- 24 Pipettes, 1 cc in 1/10.
- 3 Each volumetric pipettes, 1; 5; 10 and 25 cc.
- 1 Leibig condenser, 500 mm long.
- 20 Coplin standing jars.
- 12 Sediment glasses, 100 cc.
- 500 Test tubes, chemical thin wall with lip, 150x18 mm.
- 1000 Test tubes, bacteriological and serological, heavy wall, 120x16 mm.
- Wash bottle, 1000 cc complete.
- 10 Syracuse watch glasses.
- 24 Pillsbury slide boxes, each to hold 25 slides.
- 2 Gross microscopic slides.
- 6 Oz. microscopic cover glasses.
- 1 Babcock milk tester.
- 12 Babcock test bottles for milk.
- 6 Babcock test bottles for cream.
- Specimen jars of various sizes and shapes for the collection, temporary and permanent preservation of specimens of tissue and organs.
- Animal cages for mice, guinea-pigs and rabbits.

- 1 Cryoscope for molecular weight determination.
- 2 Dessicators with stop cock in lid.
- 2 Kitasato and Berkefield filters.
- 1 Photomicrographic apparatus.
- 1 Cameralucida.
- 1 Cabinet for microscopic specimens.
- 2 Plates, porcelain, for color reactions.
- 1 Polariscope for sugar analysis.
- 1 Laboratory press.
- 4 Prs. rubber gloves for autopsy work.
- 1 Shaking apparatus.

### Chemicals

- 1 Lb. acid acetic, 30%.
- $\frac{1}{2}$  Lb. acid carbolie, cryst.
- 1 Oz. acid citric.
- 1 Lb. acid acetic, C. P.
- 1 Lb. acid hydrochloric, C. P.
- 1 Lb. acid nitric, C. P.
- 1 Oz. acid sulfanillie.
- 1 Lb. acid sulphuric, C. P.
- 1 Lb. agar-agar.
- 1 Lb. alcohol, 95%.
- 1 Lb. alcohol, absolute.
- 1 Lb. alcohol, methyl. absolute.
- 1 Oz. aloin.
- 1 Lb. anilin oil.
- 1 Lb. antiformin.
- 1 Oz. benzidene base.
- 1 Oz. celloidin.
- 1 Lb. chlorform.
- 1 Lb. copper sulphate, C. P.
- 1 Lb. decinormal sol. sodium hydrate.
- 1 Lb. decinormal sulphuric acid.
- 1 Lb. decinormal hydrochloric acid.
- $\frac{1}{2}$  Lb. dextrose, H. P.
- 1 Lb. ether.
- 5 Lbs. formaldehyhde.
- 1 Lb. gold label gelatin.
- 1 Lb. hydrate ammonium, C. P.
- 1 Lb. hydrogen peroxide.
- 1 Oz. iodine, cryst.
- 4 Oz. iron chloride.
- $\frac{1}{4}$  Lb. jar Leibig extract of beef.

- 1 tube each litmus paper, red and blue and congo paper.
- 8 Oz. litmus solution.
- 1 Oz. mercuric chloride.
- 1 Lb. each paraffin, 46° C. and 52° C.
- 1 Lb. peptone.
- 10 Gms. phenolphthalein.
- 10 Gms. phloroglucin.
- $\frac{1}{2}$  Lb. potassium bichromate.
- 1 Oz. potassium ferrocyanide.
- 1 Lb. potassium hydrate, C. P.
- 1 Lb. sodium chloride.
- $\frac{1}{2}$  Lb. sodium hydrate, C. P.
- 1 Oz. sodium nitroprusside.
- 1 Lb. turpentine, ozonized.
- 1 Oz. vanillin.
- $\frac{1}{2}$  Gl. xylol.
- 10 Gms. alizarin.
- 10 Gms. Bismark brown.
- 10 Gms. dimethylaminoazo benzaldehyde.
- 10 Gms. cosin, yellowish water.
- 10 Gms. fuchsin.
- 10 Gms. gentian violet.
- 10 Gms. haematoxylin, cryst.
- 10 Gms. methylene blue.
- 10 Gms. scarlet R.
- 10 Gms. sudan 111.
- 1 Oz. phenylhydrazine hydrochloride.
- 1 Tube B. & W. Wright tabloids.
- 1 Tube B. & W. Pieric acid.
- 30 Gms. methyl green.
- 30 Gms. azolitmus.

### Equipment and Chemicals for Work in Physiological Chemistry

- 1 Kjeldahl still.
- 1 Kjeldahl digestion apparatus.
- 1 Water still (Barnsted or Stokes).
- 1 Balance, sensitive to 1-5 mgm.
- 1 Set of weights.
- 1 Duboscq colorimeter.
- 1 Water suction pump.
- Nephelometer attachments for colorimeter (Optional depending on method used).
- Glass cylinders for determination of ammonia with Folin absorption tubes.

- 12-50 Erlenmeyer.
- 12-500 C. C. Erlenmeyer flasks.
- 12-800 C. C. Kjeldahl flasks.
- 12-1000 C. C. distillation flasks.
- 12-25 C. C. Volumetric flasks.
- 12-50 C. C. Volumetric flasks.
- 12-100 C. C. Volumetric flasks.
- 12-500 C. C. Volumetric flasks.
- 12-1000 C. C. Volumetric flasks.
- 12-100 C. C. graduated cylinders.
- 12-1000 C. C. graduated cylinders.
- 12-1 C. C. Pipettes.
- 12-2 C. C. Pipettes.
- 12-5 C. C. Transferring pipettes.
- 12-10 C. C. Transferring pipettes.
- 12-15 C. C. Transferring pipettes.
- 12-20 C. C. Transferring pipettes.
- 12-25 C. C. Transferring pipettes.
- 12-50 C. C. Burettes graduated in tenths of a C. C.
- 6 Lbs. rubber stoppers, various sizes.
- 1000 Test tubes, various sizes.
- 6 Lbs. glass tubing, 7 mm.
- 1 Kipp generator.
- 1 Special apparatus for alveolar carbon dioxide tension or carbon dioxide content of the blood.
- 1 Lb. potass. dichromate.
- 1 Lb. potass. carbonate.
- 1 Lb. potass. sulphate.
- 1 Lb. potass. chloride.
- 1 Lb. potass. bicarbonate.
- 1 Lb. phosphate (Monobasic).
- 1 Lb. sodium thiosulphate.
- 1 Lb. sodium hydrate.
- 1 Lb. sodium carbonate.
- 1 Lb. copper sulphate.
- 2 Oz. ammonium thiocyanate.
- 2 Oz. iodine.
- 1 Lb. potass. idodide.
- 1 Lb. potass, iodate.
- 1 Lb. soluble starch.
- 1 Lb. hydrogen peroxide.
- 1 Lb. powdered talc, or pumice.
- 1 Lb. ferric alum.
- Urea tablets (Arlington Chemical Co.).
- 6 Lbs. sulphuric acid.

- 6 Lbs. nitric acid.
- 6 Lbs. hydrochloride acid.
- 6 Lbs. acetic acid.
- 6 Lbs. ammonium hydrate.
- 2 Oz. Picramic acid (Optional, depending on method selected).
- 6 Oz. picric acid.
- 6 Lbs. ether .72.
- 6 Lbs. absolute alcohol.
- Indicators.
- 6 Oz. basic lead acetate.
- 6 Oz. uranium acetate.
- 1 Oz. silver nitrate.
- 2 Lbs. sodium or potass, citrate.
- 2 Lbs. potass, thiocyanate.
- 2 Lbs. ferrosyanide.
- 2 Lbs. potass. oxalate.
- 6 Lbs. petroleum oil.
- 3 Oz. amyl or capryle alcohol.
- 2 Lbs. zinc sulphate.
- 2 Lbs. potass. bisulphate.

## A. CHEMICAL AND MICROSCOPICAL CLINICAL DIAGNOSIS

The equipment of apparatus and chemicals given in the accompanying lists is sufficient for the conduct of the following examinations and tests, which tests laboratories should be prepared to conduct.

### *Blood Examinations:*

- Estimation of hemoglobin,
- Counting of erythrocytes,
- Counting of leucocytes,
- Counting of blood platelets,
- Differential leucocyte counts,
- Examination for malaria parasites.
- Examination for basophilic degeneration,
- Examination for various anemias and leukemias,
- Determination of the coagulation time,
- Toxicity tests for the resistance of erythrocytes.

*Urine Examinations:*

- Physical characters, reaction and specific gravity,
- Qualitative and quantitative tests for albumin,
- Qualitative and quantitative tests for sugar,
- Tests for indican, acetone and diacetic acid,
- Quantitative tests for urea,
- Complete microscopical examinations for blood, pus, casts, crystals, etc.
- Phenol-sulphonphthalein or indico-earmine tests for renal function.

*Gastric Contents:*

- Titration of total acidity,
- Titration of acidity due to free hydrochloric acid, combined hydrochloric acid and acid salts,
- Fractional gastric analysis,
- Estimation of protein,
- Tests for lactic acid,
- Tests for occult blood and bile,
- Microscopic examination for food remnants, bacteria, parasites,
- Tests for ferments, as pepsin.

*Feces Examinations:*

- Tests for occult blood,
- Tests for biliary acids and pigments,
- Microscopic examination for pus, parasites, ova, foreign bodies, food remnants, etc.

*Sputum Examinations:*

- Examinations for tubercle bacilli by direct smear and antiformin methods,
- Tests for albumin and occult blood.

*Cerebrospinal Fluid, Transudates and Exudates:*

- Total cell counts,
- Differential cell counts (cyto-diagnosis),
- Protein estimations,
- Sugar estimations,
- Bacteriological examinations, including animal inoculation tests for tubercle bacilli, pneumococci, etc.



## B. BACTERIOLOGICAL EXAMINATIONS.

- Smears and cultures for diphtheria bacilli,
- Smears for the organisms of Vincents angina,
- Smears and cultures for gonococci,
- Direct smears, antiformin preparations and animal inoculation tests of tubercle bacilli,
- Culture of urine and feces for typhoid bacilli.
- Blood cultures by aerobic and anaerobic methods,
- Smears and cultures of cerebrospinal fluid, inflammatory exudates and pus transudates and secretions for the isolation and identification of any pathogenic micro-organism.
- Dark field examination for spirocheta pallida,
- Examinations of water, milk, cat-gut, instruments, gloves and other material,
- Preparation of autogenous vaccines,
- Animal inoculation tests.

## C. SEROLOGICAL EXAMINATIONS.

- Agglutination tests by microscopic and macroscopic technic for typhoid fever, paratyphoid fever and other infections.
- Complement fixation tests for the diagnosis of syphilis (Wasserman reaction) and gonococcus infections.

## D. PATHOLOGICAL HISTOLOGY.

- Conduct of complete autopsies with microscopical examination of tissues,
- Microscopical examination and diagnosis of tumors and other tissues removed during operations,
- Rapid diagnosis by freezing methods.

## E. PHYSIOLOGICAL CHEMISTRY.

Urea nitrogen of the blood,  
 Sugar content of the blood,  
 Carbon dioxide content of the blood,  
 Urea nitrogen and total nitrogen of the urine,  
 Sugar in the urine,  
 Chlorides in the urine,  
 Ketone bodies in the urine,  
 Ammonia in the urine,  
 Uric acid, phosphates and sulphates in the  
 urine,  
 Estimation of fat in cream and milk,  
 Estimation of protein and carbohydrate in  
 milk.

The laboratory should be provided with a standard work on the following subjects: normal histology, pathological histology, general pathology, pathological technic, bacteriology, immunology, clinical pathology, physiological chemistry, pathological chemistry, protozoology, anatomy and physiology. A physician skilled in laboratory work should be in charge. It is essential that one or more full-time technical assistants be employed. At least two months service or its equivalent is required of each intern in the laboratory. This service should not be divided, but the entire time of the intern should be devoted to laboratory duties for this period of time. The intern on duty in the laboratory should conduct the clinical-pathological examinations and should be required to perform at least two autopsies and to prepare the sections of tissues from these for micro-

scopic examinations. He should examine with the pathologist all tissues and specimens received from the operating room both macroscopically and microscopically, make examinations of milk and water, conduct Widal reactions and receive instruction in the Wasserman reaction. He should conduct under instruction all other work performed in the laboratory. His work should be checked up daily by the pathologist.

Suitable provision within the laboratory should be made for recording and filing all the findings of laboratory work. The use of a card system is especially advised, cross-indexed with the case records. A monthly report of work done should be rendered to the superintendent and staff.

### CHIEFS OF LABORATORIES.

The chief of the x-ray laboratory and the chief of the pathological and clinical laboratories should be members of the major staff of the hospital. By virtue of this membership the medico-surgical staff have the advantage of their presence at staff meetings, where many question of mutual importance may be discussed. In addition an opportunity is thus given to the laboratory men to impress upon various staff members the importance of the use of the several laboratories in diagnosis.

Their presence will likewise be a constant reminder to staff members that these departments are for use and not merely for ornament.

### ANESTHETIC DEPARTMENT.

This department should be under the direction of a physician who is designated as its chief. There should also be appointed to the department one or more assistants, at least one of whom should be on full time and live within the hospital in order that he or she may be available in any emergency.

It should be the duty of the anesthetists to administer anesthetics to the private patients and to critically ill ward patients. In all other cases he or she should be present with the intern while the latter is giving the anesthetic in order to instruct him. This oversight and instruction of the intern should continue not merely for a limited period of time but throughout his entire service.

### OBSTETRICAL DEPARTMENT

In addition to a well-managed obstetrical department within the hospital there should be conducted a prenatal clinic in charge of a member of the staff with an assistant. During the period of

service of the intern in this department, he should be in attendance in this prenatal clinic and should examine all cases under the instruction of the chief or his assistant. In each case the findings and measurements made by the intern should be checked up by the physician in charge. No patients except in case of emergency, should be admitted to the maternity beds and allowed to go to the delivery room without this previous examination. Upon admission to the hospital in confinement the prenatal record should become an essential part of the hospital record.

In the delivery room there should be present with the intern to oversee and instruct him, one of the physicians in attendance in this department,—not only in all complicated cases but also in a fair proportion of normal cases, and especially so during the early part of his service.

### STAFF MEMBERS

The value to the intern of the service in any hospital depends in a large measure upon the attitude assumed toward him by the members of the medical and surgical staff. The duty of a staff member is real and definite. He should insist, except in case of emergency, on his first visit to his patient that the intern shall be present with the history of the patient, including

the physical findings. In case the history is not forthcoming, due to indifference or insubordination on the part of the intern, the 'staff' member should decline to examine the patient but report the matter to the superintendent and insist that this duty be performed by the intern at once to the exclusion of any other duty. The history being in hand, should be read before the examination is made, and, during the course of the examination the previous notations of the intern should be criticised, his errors and omissions, if any, be noted. At subsequent visits the reason for each change in treatment, if any, with the result sought by the use of any remedy that is applied, should be explained.

In the surgical department during the initial third of his service the intern should act as second assistant in the operating room; during the middle third of his service, as first assistant; during the final third, in a proportion of selected cases, as the operator; the surgeon on duty should act as his assistant and instructor and see to it that he not only thoroughly understands the technique of the operating procedure but that he acquires a certain degree of warranted self-confidence.

Future inspections will take keen cognizance of the activities of the members of the staff in the above matters and

hospitals whose authorities are unable to control the actions of their staffs in these matters, even if they be fully competent in other respects, will be rejected from the approved lists. The mere possession of physical equipment does not secure adequate education.

Certain staff members in some of the approved hospitals yet fail to appreciate the responsibility of their position as medical teachers. It is suggested that such persons be urged to perform their duties more faithfully rather than jeopardize the standing of the hospital by their indifference to its requirements.

### EXCESSIVE SURGERY

Recent inspections disclosed the fact that many hospitals had developed a surgical service far in excess of their medical service; in fact in many instances the medical service was a negligible quantity. In addition to this it was further elicited that a very large percentage of the surgery was purely emergency. It is clearly evident that in such an institution an intern cannot obtain a year of instruction such as is contemplated by law. The attention of the hospitals on the approved list is called to this condition and to the fact that in a revision of these lists this unevenness of service was carefully weighed as was intimated would be done

in the former bulletin. The value of the medical service, together with the medical specialties, far outweighs in value those of the surgical in the education of the intern. Hospitals cultivating an excessive surgical service are facing the possibility of being classified in the list of "Limited Credit Hospitals."

### MEDICAL SERVICE

This disproportion between the number of surgical and medical cases treated in the average hospital is in some cases due to the local conditions of the community. In many cases it is the result of the excessive influence of some particular staff man, a surgeon, whose needs the hospital may have been formed to meet and on account of whose needs it is largely maintained. The admission of medical cases is not apt to be encouraged, lest they pre-occupy beds which might possibly be occupied by better paying operative cases.

Moreover, the laity of the community interested in the hospital frequently exhibit evidence of being so enamored by the surgical reputation of the hospital as to consider its medical work of secondary importance. The vaunted pride in the surgical activities of the hospital that permeate the general lay-mind is a significant indication of the undue emphasis



exerted toward surgery and of the apparent indifference to medicine.

Scientific medicine requires hospital facilities in the investigation of many obscure medical cases. Ofttimes the most valued investigative experience for the intern comes from medical cases. At least, he must have opportunity to secure training in medicine and the approved hospitals must see that he secures it. The more spectacular surgical work under no circumstances must rob him of the deliberate, thoughtful consideration of purely medical cases. By intensifying the medical department of the dispensary the number of cases in this service can be materially increased.

### DISPENSARY SERVICE

It was constantly noted throughout the inspections that little or no use was made of this service for the instruction of the intern. In many instances it was scarcely used even for the welfare of the patients. The general rule seemed to be to run cases through as fast as possible and to get rid quickly of all excepting those needing operations and those who might enter the hospital for this purpose. Few histories are kept and those few are mostly worthless. This service competently conducted should prove a most valuable source of education and to be

competently conducted, the various departments of the dispensary should be under the supervision of the chiefs of such departments in the hospital with the assistance of younger men. In future inspections this phase of hospital service will be carefully studied and taken under serious consideration in rating the hospitals.

Hospitals for which a claim of approval is made should recognize the importance of the dispensary service along with that of the hospital proper.

#### ARRANGEMENT OF INTERN SERVICE

The service rendered to the hospital by the intern is no less valuable than that received by the intern. This fact has tended to cause managers to seek the services of interns, especially since it seems to be a good economic proposition. This latter consideration is apt to cause them to lose sight of the fact that his work needs to be systematically arranged and supervised; that the intern is yet a medical student under practical training. In order that the time and work of the intern shall be properly directed and that the needs of the hospital shall be best performed, a definite arrangement of intern service should be made. This should feature distinctly the Medical, Surgical,

Obstetrical and Laboratory departments. Combining the laboratory service with other duties has resulted in an entirely unsatisfactory technical training and can no longer be tolerated. Unless this service is so organized as to give the intern an abundance of valuable experience which will occupy all his time for two months, the hospital should not presume to ask for the privilege of giving such internship. Definitely outlined work under a responsible head to be performed hour by hour by the intern results in mutual benefit alike to hospital and intern.

### INTERN'S PERSONAL RECORD

The hospital should encourage the intern to keep a personal record of his daily activities. In this should be included notations of his various hospital experiences with an elaboration of unusual cases. Such a diary will aid in impressing upon his memory the training so as to help him in his future professional life. It can be used both by him and the hospital in checking up the variety and amount of work received and performed. Such a record submitted to the inspectors or to others interested in the educational work of the institution would be of mutual value to the intern and to the hospital.

## NUMBER OF INTERNS REQUIRED.

The division of services falls naturally into four or more parts which require a like number of interns. If less than this number is employed, the work is so variant as to militate against distinct duties and definite work. The inspectors have found the belief more or less prevalent that the number of essential interns should be determined by the service aid required in the operation of the institution. The suggested requirement by the Bureau of one intern to twenty-five beds has proved to be a wise one. The full quota should be secured if possible. Where less than the required number is available the services should nevertheless be expanded fully, the interns be required to rotate through them systematically and the uncovered services be cared for by the staff itself. The Bureau is insistent that this departmental service shall be followed and looks with suspicion upon the hospital which attempts to operate with less than four interns,—one for each department as outlined in the arrangement of service.

## INTERRUPTED INTERNSHIPS

It not infrequently happens that for some reason an intern leaves a hospital during the term of his service, thereby

creating a vacancy. This leaves one service without an intern. In such an emergency it has been the custom in the past for the hospital authorities to insist that the work of the departed intern shall be performed by the remaining interns. This custom has most generally so greatly interfered with the work of the remaining interns that they have been unable to properly perform the duties of their several services. In consequence histories are unwritten, patients are neglected, chiefs are unattended, interns are disgruntled and feel that they are unfairly treated and the entire hospital service is disarranged. When the intern enters the service of a hospital he does so on a contract, written or verbal, both equally binding on him and the hospital. He has contracted for a certain stipulated service and agrees to pay for this service with his time and labor. He has as much right to hold the hospital to its agreement as the hospital has to hold him: it is a mutual obligation. It becomes a very serious question whether the hospital has a right to jeopardize his opportunity for a competent education by demanding such an amount of extra duties of him as to destroy his opportunities for deliberate study and thus demoralize the work he has in hand. The Bureau advises that, if it be not possible to engage another intern, the vacated service be left

without the aid of an intern. It would seem to be by far the lesser evil to have one service unattended by an intern than to disorganize every other service in the hospital, to have dissatisfied and disgruntled employes in the person of the interns and to risk the loss of one or more of the other interns for these reasons. This not only works an injustice to the remaining interns but raises the question of the right of breaking a contract.

### IRREGULAR INTERN SERVICE

The Bureau is disinclined in the case of "Full Credit" hospitals to allow credit for a short intern service except for reasons explained satisfactorily to the Bureau. It is generally demoralizing to the service of the hospital to have changes take place in its intern staff. In addition, in case of change from one hospital to another, the various services of the intern may be duplicated. Each change wastes several weeks of the time of the intern in adjusting himself to his new environment. In contemplating a change of service from one hospital to another, therefore, an intern should consider the fact that before being admitted to the examinations he is expected to have completed fully the service of the hospital into which he enters. This would not obtain in the case of "Limited Credit" hospitals.

## DISAGREEMENTS BETWEEN MANAGEMENT AND INTERNS

So many complaints have come to the Bureau from hospitals regarding the behavior of interns and from interns as to their disagreements with the management, that the Bureau believes many of the difficulties arising between hospitals and interns will be solved when it is known that some central authority takes cognizance of the same. The Bureau has therefore decided to establish a clearing-house of hospital and intern disaffection. It is hereafter requested that all hospitals, in the event of trouble arising in which it becomes necessary to dismiss an intern, or, in the event of an intern leaving the hospital without consent, report the facts to the Bureau together with any action the hospital may have taken in the matter. The intern will be given an opportunity to present his side of the case. Should in the judgment of the Bureau the offence be considered sufficiently grave, the intern will become ineligible for admission to the state examinations.

Sometimes under grave charges interns leave one hospital, apply to another hospital and are accepted without question. The Bureau would request that in the fu-

ture no hospital shall admit into its service any intern who has served part time in another hospital, without first applying to the Bureau for his previous record.

### ADMISSION OF VENEREAL DISEASES TO HOSPITALS

Venereal diseases are one of the great menaces to the health and social welfare of the community. Patients suffering from these are among the first to apply for treatment to a young physician entering into practice; consequently there is no single class of cases in which the intern should receive more careful instruction. The Bureau has been pleased to note that most of the better class of hospitals have adopted its recommendation regarding the admission of venereal diseases and it hopes further that this service will yet be considerably increased; also, that all approved hospitals will continue to provide suitable accommodations for these cases.

### POST MORTEM TEACHING

Teaching by means of autopsies in Pennsylvania as well as in the rest of the country is so unsatisfactory as to reflect seriously upon the medical profession. The importance of this subject as a prime factor in medical education needs only to be mentioned in order to be realized. It is



true that the racial and religious prejudices of certain communities often render the matter difficult. It is equally true that laws and lack of sympathy on the part of public officials (coroner, undertaker, etc.) add to the difficulty. However, the observations of the Bureau of Medical Education and Licensure during four years of hospital inspection, in taking into full consideration all the obstacles obtaining, have convinced its members that the main fault lies with the indifference, the ignorance and the indolence of the members of the medical profession; ignorance, because the majority do not know how properly to conduct an autopsy and derive valuable knowledge therefrom; indolence, because the steps necessary towards conducting an autopsy involve a deviation from their routine activities and is therefore a trouble; indifference, because the knowledge of a proper manner of approach to the friends of the patient is consciously lacking. To many physicians the chief interest in the practice of medicine is still centered in the easier method of prescription writing and the subsequent collection of bills.

When a so-called hospital pathologist seriously says he is unable to obtain more than half a dozen autopsies a year from a hospital service of from 500 to 1,000 patients he thereby convicts himself of utter

incompetence. The Bureau has been quietly studying this subject during its inspections of the past four years and in future consideration for continued approval will take serious cognizance of the attitude of individual hospitals in this respect. This reason alone may be the cause of refusal to approve a hospital.

Likewise the whole attitude of the staff in its various component parts is assuming more and more importance in the consideration of the Bureau as to the approval of any individual hospital. If the staff members indicate little interest in intern teaching, this Bureau will show less interest in keeping the hospital on the approved list.

## FUTURE READJUSTMENTS

The primary purpose of internship is to secure for the prospective physician a practical training in all the lines of activity which pertain to the art and science of medicine. This Bureau assumes that all the essential equipment for such experience exists in each approved hospital which offers this training. The absence of such equipment is sufficient cause to disqualify the hospital for this privilege; its presence alone, however, will not assure a satisfactory course of training.

The efficiency of the intern's course depends largely upon the ability of the staff members to teach and the fidelity with which they do teach the student. The evidence of the instruction given comes to the inspector largely through the records on file in the institution. A complete system as outlined by the Bureau or its equivalent is henceforth demanded. A specimen copy of such a system which the Bureau will consider as an irreducible minimum has in the past been furnished every hospital of the state. This includes such supplementary records as should be found in the x-ray, laboratory and dispensary departments, as well as a satisfactory diagnostic index and a serviceable end-result card.

The history shall not only be recorded, but where interns are serving or have served, should show evidence of having been inspected, corrected and collaborated by the staff member in charge of the case. The signatures of both the intern who secures and records the data and the staff member who inspects the same should be attached to the history sheet at the conclusion of the investigation. This should be done during the first twenty-four hours of the patient's presence in the hospital.

All hospitals asking for inspection with the purpose of having their names added to the approved list will be judged pri-

marily on the completeness of its record system and the thoroughness with which the various component parts are elaborated. Unless this inspection proves thoroughly satisfactory along the above lines, no further consideration of approval of the hospital will be entertained.

All hospitals on the approved list being reinspected for any purpose and found to be unsatisfactory in the aforesaid considerations will be removed from the list.

On future reinspections all hospitals found to be without specially qualified laboratory technicians or specially trained anaesthetists will be removed from the approved list.







